THE AMERICAN BEE JOURNAL
CIRCULATES
ALL OVER THE WORLD
PUBLISHED BY
THOS. G. NEWMAN & SON.
CHICAGO, ILL.

THOMAS G. NEWMAN,
EDITOR.

Vol. XXIV. Oct. 10, 1888. No. 41.

CONVENTION BUZZINGS

The Earnest Man of the Convention was the son of friend A. I. Root.

The "Bees and Honey" Building on the Centennial grounds was a great attraction on Friday.

The Next Session of the International is to be held in Brantford, Ont., and Mr. Holtermann, editor of the *Honey Producer* of that place, is the Secretary.

Father Langstroth has taken a severe cold, and is again unable to leave home. For that reason his promised essay for the North American Convention was among the missing.

The New Constitution of the International Society was adopted on Thursday evening, as laid over for consideration at the last meeting. We hope that it will be a means of increasing its usefulness.

Mr. J. Y. Detwiler, from Florida, had some very fine samples of mangrove honey at the convention. It was fully equal to white clover honey, and we do not wonder why he objects to its being quoted in the honey markets as "Southern honey," and priced by the gallon. It should be quoted separately as mangrove extracted honey, and priced by the pound, like other kinds of equal quality and value. Mr. Detwiler was not located in the yellow fever district, but he found it difficult to leave the "stricken State." He will spend a few months in Toledo, O., where he formerly resided. He is an enthusiastic apiarist.

The North American Convention at Columbus, O., was a small but a very enthusiastic annual gathering of the bee-keepers of the Continent. Some seven States were represented, and our friend Holtermann, of Brantford, Ont., represented the Province of Ontario, Canada. It convened last Wednesday morning, and held six sessions. Then, as it was generally desired by those present to visit the Centennial grounds to view the attractions there presented, including the bee and honey show, the last day was spent on those grounds in social and fraternal intercourse, while examining and commenting upon the exhibits of bees, honey, and apiarian supplies.

Some of the principal exhibitors were A. I. Root, Dr. A. B. Mason, Dr. H. Besse, Dr. G. L. Tinker, Mr. McPherson, etc.

The honey exhibit was very fine, and conferred credit upon all the exhibitors, many of whose names we cannot now recall.

Mr. Root's exhibit of apiarian implements was large and varied, covering almost everything used advantageously in apiculture. In the "Power Hall" Mr. Root had his machinery running which makes one-piece sections complete, from the wood in the rough. The saws make such fine work that the sections looked as though they had been sand-papered. It is a triumph in the art of making sections to have them beautiful as well as useful. To say that in workmanship they were fully equal to those four-piece sections made by Dr. G. L. Tinker, is no small praise, for the Doctor's work has heretofore excelled almost everything presented in that line.

The magnificent coliseum building on the grounds is a marvel. It is said to hold ten thousand persons, and seat about six thousand. The speaker can be distinctly heard anywhere in the hall, so perfect are the acoustics thereof. It is about 250 feet across, and 100 feet in height.

Our visiting company consisting of Mr. A. I. Root, Dr. Miller, Mr. McLain, Dr. A. B. Mason and ourself. We prevailed upon Dr. Miller to play the organ and sing several pieces, accompanied by the rest of the party. We went to the further side of the hall, and we could hear the words distinctly—but we cannot enumerate all the things which were very attractive to us.

Mr. Ernest Root, son of A. I. Root, an estimable young man, was accompanied by his charming and affable wife. He had with him his instrument for taking instantaneous photographic views, and it was well employed. He "took" the members of the convention, the bee and honey building on the grounds, and several views of the exhibits.

Lady Members to the number of a dozen were in attendance at the Convention at Columbus. We will give the list next week. We regret to say that Mrs. L. Harrison was absent on account of poor health.

The Horticultural Society was in session at Columbus at the same time, and in the same building as the Bee-Convention, and we record the fact with pleasure that both societies worked very harmoniously. Mr. Devol, Secretary of the Ohio State Horticultural Society, was introduced to the Bee-Keepers' Convention by the Editor of the AMERICAN BEE JOURNAL, and in behalf of the horticulturists, he extended an invitation to all the bee-keepers to attend a meeting of the Horticultural Society, which was then in session in the Senate Chamber. The Convention received Mr. Devol with much applause, and by vote thanked the horticulturists, and accepted their fraternal invitation.

Upon entering the Senate Chamber we found the horticulturists engaged in a discussion concerning the fructification of fruit-bloom by insects. The bee-men were invited to take part, and they did so. The result is that it was generally agreed that the bees and other insects performed very valuable work upon the flowers, by fertilizing them, and thus increasing the fruit.

Several of the horticulturists mentioned the fact that the bees were often heard "roaring" over the bloom of the strawberries. Upon being asked if there was any noticeable difference between their "roaring" over the Crescent and Wilson varieties, it was answered in the negative. Some people had "notions" about their being a difference, but none were discovered upon close examination.

We are glad to note a growing friendliness among fruit-growers towards their special friends—the bees. We shall do all we can to foster and encourage such a desirable result.

Eight States were represented at the Inter-National Convention. The following are the officers elected for the ensuing year:

PRESIDENT—Dr. A. B. Mason, Auburndale, O.
VICE-PRESIDENTS—Thos. G. Newman, Chicago, Ill.
Prof. G. W. Webster, Lake Helen, Fla.
Joseph Nysewander, Des Moines, Iowa.
R. L. Taylor, Lapeer, Mich.
O. L. Hershiser, Jamestown, N. Y.
Martin Emigh, Holbrook, Ont.
Frank A. Eaton, Bluffton, Ohio.
F. Minnick, Bessemer, Wis.
SECRETARY—R. F. Holtermann, Brantford, Ont.
TREASURER—Dr. C. C. Miller, Marengo, Ills.

Singing was made a feature of the convention in Columbus, O. Dr. Miller is an organist, and had composed the music for two bee-keepers' songs, which were written by that poet-laureate of bee-men—Mr. Eugene Secor. Mr. A. I. Root, of Medina, O., had them printed and freely scattered at the convention. The result was some lively singing to introduce the *work* of each session. We think that no vote of thanks was offered to these gentlemen—wholly due to thoughtlessness, not to ingratitude—and we now propose such a hearty vote by the larger convention made up of absentees. That all may vote understandingly, we hope to publish both the music and words of one song in our next issue.

GLEANS OF NEWS.

Uses of Honey.—In the *Orange Judd Farmer* we find the following interesting item on the uses to which honey is now frequently put. The superior value of honey in the "sweet manufactures" of the day is just beginning to be appreciated; and when consumers once realize its excellence as a substitute for sugar, and its comparative inexpensiveness, honey will then occupy its proper position—not only in medicine and the culinary art, where its use would bring health and happiness to all, but also in the manufacture of luxurious confections. The item referred to reads thus:

In all ages honey has been used for many purposes. The Ancient Britons used it to make mead, and this drink continued to be much used hundreds of years after them. When malt liquors became popular, and when sugar was introduced, the uses of honey went down for a time, but of late years it has gone up again with a bound. Honey is largely used in the manufacture of honey chocolate creams and honey chocolate tablets. There is a delicious taste of the honey in these articles, but they are so judiciously blended with the other materials that they are not too sweet. Honey is also now largely used by the confectioners in the place of sugar in many kinds of lozenges, cough drops and other sweetmeats. Glycerine and honey jujubes for the throat; corn and honey food; herbal tablets, etc., are only a few of the many things which might be mentioned. The toilet is not left out, as it is used in soap and dentifrice. Doctors use it very largely for many purposes, and many doctors are amongst our most successful bee-keepers, and thus the purity of their medicines may be guaranteed. There are many persons who are not allowed to use sugar at all; to these honey comes as a boon. It is a curious thing to note that even the angler now uses honey, and natural honey fish bait is put down in the list of necessaries for the modern complete angler. What would old Isaac Walton say to this?

Prof. N. W. McLain, of the Government Experiment Station at Hinsdale, Ills., has been appointed superintendent of the Apiarian Exhibit of the Paris Exposition to be held in April, 1889, and he is now making preparations to gather together the largest and best exhibit of bees, honey, apiarian supplies, implements, and their processes of manufacture, that has ever been made. Let us all help him to make up the exhibit, and thus show the world what we can do.

Winnebago County, Iowa, held its first fair the last week of September, and it was a success, the display in every department exceeding all expectations. Mr. Eugene Secor—one of our valued correspondents—is the President of the Agricultural Society, which fact of itself should have insured a successful outcome of the fair. Mr. Secor and W. W. Wright made a fine display of honey, which attracted a good deal of attention, and Mrs. Secor made a good showing of canned fruit.

Mr. R. McKnight, of Owen Sound, Ont., on Sept. 29, 1888, writes as follows concerning the exhibit of honey which he made at the Toronto Industrial Exhibition:

I send you a photograph of my honey exhibit as shown at the Industrial Exhibition at Toronto recently. It took the special prize of $50 for its general "get up," apart from the quality and quantity of the honey.

My aggregate prizes on this exhibit amounted to $87—the most taken for honey alone, by any one here, up till the present time.

The photograph shows the end and one side of the exhibit. The extent of space it covers is 16x4 feet, rising to 4½ feet from the stage at the back end, with a uniform ascent from front to rear.

The photograph referred to by Mr. McKnight is an excellent one, showing a very creditable and finely-arranged exhibit of honey, both comb and extracted. Among the numerous nicely-labeled glass cans and jars of honey are placed a number of pots of beautiful flowers, which adds much to the attractiveness of the display. Such exhibits of the products of the apiary will do a great deal toward familiarizing the general public with the results of the labors of the bees and their keepers, and also bring to the attention of interested spectators this unexcelled food-product—honey—in its various forms. Thus will the apiarists not only develop a good home market for their production, but at the same time they will contribute no little to the health and happiness of others.

A Young but promising apiarist of Virginia has passed away. We refer to Mr. Samuel B. Wood, eldest son of Mr. Daniel T. Wood, aged 23 years. He died at his father's residence after a lingering illness of consumption, on Monday, Sept. 9, 1888.

When at College his health became impaired, and three years ago he relinquished his studies, left College, and commenced to keep bees. He was very successful, and would have become a distinguished apiarist in time. The Winchester *Times* says:

He was an exemplary young man, and had won the esteem and admiration of many friends by his Christian demeanor and attractive manners. His death is deplored by all who knew him. To the sorely bereaved parents and family we tender our sympathies.

He was buried on Sept. 12, from his father's residence at Mount Hebron, three miles south of Jordan's Springs. The funeral procession was a very long one, showing that he had many friends.

Mr. T. B. Blow, one of the most progressive apiarists of England, is now in America, on a visit. He sailed on Sept. 19 from Liverpool to New York, in the steamship "City of Rome." He intends to visit some of our principal bee-keepers. As Mr. Blow is well acquainted with the portions of Europe and Asia from which we obtain the Eastern races of bees, his company will be very entertaining.

Farmer De Forest's Birthday Bees.—Cyrus De Forest owns a farm in North Wilton, on the Danbury branch of the Housatonic railway. On his birthday every May a swarm of bees come to his place and take refuge between the floor and the ceiling of his house. All efforts to keep them out have failed, and it has not yet been discovered how they gain an entrance. At the end of the season the floor is taken up and the honey is gathered. Last year Mr. De Forest got 94 pounds, and this year his crop was 76 pounds. The remarkable facts of the case are the regularity of the appearance of the bees. Last year was the one exception in several years, they coming one day earlier than usual. The bees are killed every year, but a swarm takes their place the next season.

A correspondent sends us the above for publication. It is evidently one of the "yarns" now going the rounds. It is very unlikely they should come "every May," on his birthday, even if it did once happen.

The Toronto Honey Exhibit.—In the *Canadian Honey Producer* for October is given a list of the exhibitors and their exhibits, with the amounts secured in premiums, besides diplomas. From that list we glean the following, the judges being J. F. Dunn, Allen Pringle and W. McEvoy:

For various exhibits R. McKnight, of Owen Sound, secured $37 in premiums; R. F. Holtermann, of Brantford, $42.50; R. H. Smith, of Bracebridge, $30.50; E. L. Goold & Co., of Brantford, $23; Will Ellis, of St. Davids, $8; Mrs. John Wilson, $2; and J. Spence, of Toronto, a silver medal. Mr. R. McKnight received, in addition to the premiums, $50 "for the most tasty, attractive and neatly-arranged exhibit of honey in the apiarian department, all the honey the production of the exhibitor." Half of the prize was given by the Ontario Bee-Keepers' Association. Although the season had proved disastrous to the bee-keeper, the exhibit on the whole was very creditable, indeed.

The Rhode Island Bee and Honey Exhibit is thus mentioned by the Providence *Journal* of Sept. 26:

There are six entries, the largest of which is by Samuel Cushman, of Pawtucket. He has six hives of bees, showing strong colonies of the best working strains of Italian, Syrian, Carniolans and natives. He has also an exhibit of hives, winter hives, comb honey hives, and hives for extracting the honey. He has also a large cage showing a swarm clustered in their natural state.

In this exhibit there are 1,200 pounds of the best Vermont comb honey, and 200 pounds of extracted honey, extracted by centrifugal force, with an extractor on view.

A. C. Miller, of Drownville, ex-Secretary of the Rhode Island Bee-Keepers' Association, has an exhibition of comb honey, extracted honey, honey vinegar, and observatory hive of bees, light comb foundation, a machine for placing the foundation in the supers, and specimen hives for the production of comb honey.

Mrs. S. M. Lackey, of Providence, shows observatory hives, samples of wax, comb honey, extracted honey, and an extractor.

Sam Warren Lewis shows 200 pounds of extracted honey in glass, 10 pounds of comb honey, and the largest display of beeswax, one cake of which was made 31 years ago.

S. A. Dexter shows an observatory hive, showing the production of comb honey.

QUERIES AND REPLIES.

Breeding so as to Eradicate the Swarming Propensity.

Written for the American Bee Journal

Query 582.—Can a strain of bees be improved by careful breeding, which will have bred out the propensity to swarm?—Ohio.

I doubt it.—EUGENE SECOR.

We think not.—DADANT & SON.

I think so, most assuredly.—A. J. COOK.

I think so, to some extent.—J. M. HAMBAUGH.

Possibly, but I think that it would be a long job.—C. C. MILLER.

I do not think that the swarming propensity can ever be bred out.—J. P. H. BROWN.

It is possible to improve bees by careful breeding.—H. D. CUTTING.

I think so, but it would take a very long time.—R. L. TAYLOR.

I do not know; but I would like such bees if as good in other respects.—C. H. DIBBERN.

Oh, yes. You can breed toward almost any desired mental or physical standard, but practically I think you had not better spend much of your time trying to breed out the propensity to swarm.—JAMES HEDDON.

By careful selection of breeding-stock, the propensity to swarm can be diminished.—M. MAHIN.

They may, but I think it is doubtful; hens have been bred that lose the propensity to set.—MRS. L. HARRISON.

No doubt of it. Chas. Dadant & Son have nearly accomplished it, aided by their large hives.—J. M. SHUCK.

No one can tell. Theoretically it can, but I think that it would cause injury to so breed. See *Gleanings* of 1883, for an article on that subject.—J. E. POND.

I live in Ohio, but I do not know of any such bees in the State, and I do not believe that there ever will be any such here, or elsewhere, for that matter.—A. B. MASON.

No. I have had colonies of bees that did not swarm for four years, but after carefully experimenting without avail, I adhered to my convictions, that it is useless to try to work to change natural laws.—P. L. VIALLON.

I think not. If the desire to swarm under favorable conditions could be bred out of bees, it could only be done at a sacrifice of valuable qualities. I think the only way to breed out of bees the desire to fulfill this mission in the earth, would be to breed downward until no energy was left. I will suggest that if you can breed a strain of bees that always have *young queens*, healthy and strong, you will have a non-swarming strain. But if the queens are to get old, like all other living creatures, you will make a failure.—G. W. DEMAREE.

To the first half of the question, yes; to the other part, I will say that when working for comb honey, you will be apt to get swarms after "careful breeding" for a thousand years.—G. M. DOOLITTLE.

Careful selection, and breeding may very much improve bees, but swarming is their method of increase, and to "breed out the propensity to swarm" is more than one might hope for, or expect.—THE EDITOR.

The Annual Rent of an Apiary.

Written for the American Bee Journal

Query 583.—What annual rent could be profitably paid for an out-apiary of 100 colonies?—Nebraska.

All depends upon circumstances, and it is very hard to answer.—P. L. VIALLON.

Last year and this, it would be the widow's mite.—MRS. L. HARRISON.

So much depends, that I will not try to shed any light.—JAMES HEDDON.

It would depend upon the location and the honey-crop prospects.—J. P. H. BROWN.

It is hard to say. This year, a "goose-egg," as the College boys say.—A. J. COOK.

Ten to fifteen dollars ought to pay the ground rent.—C. H. DIBBERN.

In this locality not a cent, unless the seasons change.—H. D. CUTTING.

Much depends. Lines should be very nicely drawn to decide.—J. M. HAMBAUGH.

I do not know. It will depend wholly on the locality and season, or more particularly on the crop of honey gathered.—J. E. POND.

So much depends upon varying circumstances that I cannot give an opinion.—M. MAHIN.

Annual interest at the current rates upon the cash value of the bees and hives.—J. M. SHUCK.

That depends upon so many minor considerations that I will not attempt a guess.—EUGENE SECOR.

No one could tell without knowing the average yield of the field, and other circumstances.—R. L. TAYLOR.

That depends upon the locality and season. Last year and this, in most localities, any rent would have been too much. Last year Dr. Miller's surplus honey cost him over $2.00 a pound.—A. B. MASON.

It depends upon the location. In a first-class place, say 1,500 pounds of extracted honey, or its equivalent. We would advise the renter, however, to give nothing but *a share of the crop.*—DADANT & SON.

I guess that would depend upon the season. Such seasons as the past two have been, give little margin to the apiarist who has *no* rent to pay.—G. M. DOOLITTLE.

In former years I would have answered that an annual rent equal to 20 per cent. on the investment could be safely and profitably paid; but with the experience of the last three years freshly in my mind, a man would have to pay me a *bonus* equal to 25 per cent. of his investment, to take his bees off of his hands for one year.—G. W. DEMAREE.

So much depends upon the locality, the pasturage near it, the kind of season, that it would be difficult to arrive at a correct way to answer the question. Ten dollars ought to pay the rent in an ordinary season, perhaps.—THE EDITOR.

Convention Notices.

☞ The Pan-Handle Bee-Keepers' Association will hold its next meeting in the K. of P. Hall on Main St., between 11th & 12th Streets, in Wheeling, W. Va., on Nov. 21 and 22, 1888. All bee-keepers are cordially invited. W. L. KINSEY, *Sec.*

☞ The next meeting of the Union Bee-Keepers' Association will be held at Clayton, Ills., on Tuesday and Wenesday, Oct. 16 and 17, 1888, in the Town Hall at 10:30 a.m. The Park Hotel will charge $1.00 per day; the restaurants 25 cts. per meal. We expect Messrs Dadant, Hambaugh, Camm and other prominent bee-keepers to be present.
S. N. BLACK, *Pres.*

CORRESPONDENCE.

DO BEES HEAR?

Have Bees the Sense of Hearing?—Experiments.

Written for the American Bee Journal

BY S. A. SHUCK.

On page 567, I find this sentence: "Many seem to think that bees have the sense of hearing, but so far all of my experiments go to prove to the contrary."

I am very sorry that this statement comes from one whose teachings are so plain and practical, and his logical deductions so nearly without a fault, that it gives me a feeling of regret to believe that he is in error; and notwithstanding the fact that it makes no difference in dollars and cents, to scientific apiculture, whether bees hear or not; if they possess the sense of hearing, it must appear that any one of extensive experience with bees should have discovered this fact.

I am confident that bees possess the sense of hearing equal to that of sight, scent or taste; and if I fail to give satisfactory evidence in support of my position, will some one please to point out my error?

In July, 1882, I attached one end of a silken thread to the waist of a very active virgin queen. The other end of the thread was attached to a long pole, and this pole was held up in the apiary when the drones were flying freely. This queen flew as far as the thread would allow her to fly, and continued her efforts for some considerable time. Then after a short rest, renewed her efforts. This flying and resting by turns, was repeated many times. As long as she continued to fly, the drones pursued here in great numbers, but the instant she stopped to rest, the drones dashed away as if suddenly frightened, appearing again as soon as the queen put forth an effort to fly. Does it not appear that it was the sound produced by the queen's wings that attracted the drones?

Some four or six weeks ago I shook a large swarm from my hiving-box on the ground in front of a hive prepared for them. A few bees remained in the box, and instantly they commenced the "call" to their comrades that were scrambling in every direction to gain a footing. I placed the box under a large Russian sunflower, some 3 feet from the entrance of the hive. I saw the queen take wing from the bees on the ground, and not seeing her return to them, as soon as the bees got started into the hive, I took up the box and found the queen in it.

I do not think that this box, with perhaps a hundred bees in it, smelled more of bees than the 6 or 8 pounds of bees on the ground; and not only this, but it is evident that this queen was attracted more by the humming noise of the few bees in the box, than she was by the scent or sight of the scrambling mass she deserted.

Just as I had shaken a swarm from this box in front of a hive, I discovered another swarm issuing from a hive only about 20 feet distant. The queen of the issuing swarm could not fly, so I knew that the bees would very soon return. I quickly gathered up some dry grass that had been cut from among the hives, and piled it in front, on the two sides and top of the hive the bees were entering, thus covering up the bees that I had just shaken from the box. In a few moments the bees in the air began to return, and just as I had anticipated, commenced tumbling down on this pile of grass, and started right down through it to the loud humming beneath. I picked up a small stick and commenced whipping this pile of grass. This put the bees to flight, and in another moment they were tumbling down at the entrance of their own hive.

The bees under the grass were entering the same hive they had issued from only 10 or 15 minutes before. No change had taken place in the surroundings except the bunch of grass over the hive. There were over a hundred hives in the apiary. The ground is level, and the hives are in rows about 11 feet apart, and 9 feet apart in the rows. One hive faces to the east, and the next one to the south, and I see no excuse whatever, for those bees trying to crawl down through this bunch of grass, except the loud humming noise beneath it.

I have given three examples, one each of drone, queen and worker-bees being attracted by sound. These three instances are only a few of many very similar instances that have come under my observation during the past twelve years. I will now offer some experiments that I am confident will enable any one to prove to his entire satisfaction that bees do hear.

Take a comb with adhering bees from any hive of gentle bees. Be careful not to excite or disturb the bees. Hold the comb before you. Now sing, whistle, hollow or blow a horn, so as to make any kind of a prolonged tone of a musical nature, and of a reasonable degree of loudness, and nearly every bee on the comb will stop to listen. The effect is so striking that no one can doubt it. Do not be afraid of being stung, unless you blow your breath upon them. When the noise ceases, they resume business as if nothing had taken place. I have tried these experiments many times during the past ten years, and I know that the bees will listen while you sing.

I have observed the same effect from the piping of virgin queens, when nearly all the bees of a fair sized colony would listen, while the queen was piping. Please to test this matter, and report through the BEE JOURNAL.

Liverpool, Ills.

LEGISLATION.

A Canadian's Views About Nectar being Public Property.

Written for the American Bee Journal

BY DR. C. C. MILLER.

FRIEND NEWMAN:—I enclose a private letter from one of the prominent bee-keepers of Canada, and I think that I betray no confidence in allowing you to print that part of it which is of public interest, and shows some careful thinking. I am glad to know that I am not so entirely alone as I formerly considered myself, in thinking that *something* ought to be done. After reading the article of Mr. McNeill, on page 586, and the comments thereon, I am strongly impressed that bee-keepers will begin to see the possibility of conflict arising at any and all points, and that certain laws that might perhaps be easily had for the asking, would forever set them free from the danger of litigation that would come without the asking, and require heavy fees before its departure, But here is the letter from Canada:

"I fully believe in such legislation as will enable a bee-keeper, by paying a reasonable sum of money, to control a certain territory. It seems to me that it would be a great mistake, on your part, to admit that the nectar does not belong to the land-owner. The farmer owns the land, pays the taxes, cultivates it, fences it, and, in fact, he is the "lord" of the soil, and I know enough of farming to know that his labor is no mean task, and I confess it would be very difficult to convince me that the whole grass, or rather clover crop, including the roots, stalks, leaves, flowers—yea, and even the very nectar in the blossoms, do not belong to the owner of the soil.

"All and singular, most surely, are the personal property of the land-owner. But at the same time it is quite as clear to my mind that if all farmers or land-owners, if you please, should undertake to keep bees, and gather each his own share of that nectar, each and every one, or nearly so,

would make a miserable failure; and what little honey that might be secured, or should be secured in that way, all costs being computed, would cost very likely not less than one dollar per pound.

"Well, now, it appears to me that the most rational thing in the world would be, for these land-owners to simply sell their right for a term of years to a professional who would, in the most economical method possible, secure that honey, and thus be in a position to supply the people in nice shape, at a minimum price, one of the choicest gifts of a kind and benevolent Father.

"But how is all this to be accomplished, you ask? It is not a difficult matter, in my way of thinking. Simply get a permissive, local-option Bill through your Legislature, empowering the voters of a given locality, the size of which may be fixed by the bee-keeper who may wish to establish, or one who has already established an apiary in such a locality. Then after the necessary legal preliminaries are complied with (which need not be enumerated here), let the matter be decided in the same manner that many other public matters are decided, namely, by the ballot.

"I think that the money could be applied to educational matters or purposes with perfect satisfaction and equity to the people in that particular locality voted to the use of the bee-keeper in question. I believe this scheme would be just to all parties concerned.

"Every land-owner would be remunerated for his own nectar. The bee-keeper would feel that he was not stealing his living from some who think that they have a right to some fair consideration for the nectar that their own possessions produce. He would also rejoice in a sweet feeling of security, that some unwise person cannot now come along and ruin his prospects after he has gone to all the expense of establishing an apiary.

"There would be no difficulty in carrying such a by-law in almost any rural district. Do you not see that nine-tenths of the people never keep bees, nor have they any expectation of doing so? and they would be quite willing to dispose of their share of the nectar to any one who would in turn pay a reasonable sum into the common school fund. Almost any offer that promises to reduce the taxes without inflicting difficulties, will be accepted by the people. Of course some difficulties would have to be surmounted, and details adjusted, but I see no real serious objections to the scheme.

"But on the other hand, if you start out declaring that the nectar is public property—belongs to everybody—I predict that in a short time you will have a lot of fellows pulling your hair in right lusty earnest."

REPRODUCTION

In the Honey-Bee—Interesting Facts About Bees.

Read before the Pa. State Board of Agriculture

BY PROF. GEO. G. GROFF, M.D.

To the naturalist the means by which living beings reproduce their kind is always a subject of interest. Indeed, of all the functions of life, that of reproduction is the most interesting, the most wonderful, and to each species, the most important. Some forms of insects seem to exist in the mature state only that they may perpetuate their kind, and this being accomplished, they perish; the males in the act of fertilizing the females, the female, at once, when the eggs are safely deposited, neither parent ever seeing their offspring.

In all the higher animals reproduction is accomplished through the intervention of the two sexes, the male and the female, but among many of the lower forms of life both male and female are frequently dispensed with. In some cases the offspring pass through so many and so great transformations that it has been exceedingly difficult to trace the whole life history of these strange beings. In some cases the germs of life are so small that their origin cannot easily be discovered, except with the most patient research. This is true of the honey-bee.

A knowledge of the modes of reproduction, and of the laws governing the same, is always of value to the agriculturist and to the naturalist, because in the case of the higher forms he may readily improve his cattle, grains, tubers and fruits by a careful study of and conformity to these laws, as is so well illustrated in the great number of valuable varieties introduced in late years. And also in the case of the lower forms of life, pests and all kinds of animals and vegetable parasites, if their habits, times and modes of reproduction be understood, we may often, with great ease, cut short the career of forms which, undisturbed, would have caused great losses. The different modes of reproduction in the organic world may be outlined as follows, viz:

1. Asexual, divided into Division and Budding, both of which are again divided into Continuous and Discontinuous.

2. Hermaphrodite, divided into close-fertilization and cross-fertilization.

3. True Sexual, divided into Oviparous, Ovaviviparous and Viviparous; the last being again divided into Aplacental and Placental.

The minute animals called animalcules, which live in stagnant waters, in damp places, and in the sea, in many cases reproduce their kind in some "asexual way," *i. e.*, without the intervention of the sexes. Of these asexual methods there are two principal ones. In the first, the body of the parent splits into two or more pieces, which, by absorption of nutrition, rapidly grow into perfect animals. Sometimes the young remain attached to the parent germ, and then we have "continuous" division, and the resultant is a "colony," as is true of sponges, sea-mats and numerous other marine forms. In other cases the young are all set free from the parent organisms.

Budding differs from division, in that the young appear on the sides of of the body of the parents as small buds or enlargements. They remain attached, growing larger and larger, until they become perfect animals in all their parts. When development is completed, they either remain attached to the parent or else are set free to live independent lives, in the first case forming "colonies," as in continuous division. Coral colonies are formed in this way. In some of these lowly asexual forms the young are entirely unlike their parents, and at no period of their lives resemble them. These beings of the second generation bring forth young, which return to the original type, that is, resemble the grandparents. This is called "alternation of generation." Jelly fish are such intermediate forms. Nearly all the lowest plants, as moulds, mildews, blights, etc., are asexual.

The next mode of reproduction is the "hermaphrodite." In this the sexes both exist in the same individual. This is the common mode in the higher plants, the male and the female elements being in the same flower. The common earth-worm is a true hermaphrodite, as is the tape-worm. In the earth-worm we have *cross-fertilization*, that is, two individuals reciprocally fertilize each other, while in the tape-worm, which fertilizes its own ova, it is called "close." Nature generally abhors close fertilization, or, at least, usually contrives that it shall not continue the permanent order of things with any group of beings. Thus, in plants, the fertilizing pollen is carried to distant plants of the same species, by the winds, or by honey-seeking insects.

The highest mode is the "true sexual," in which the sexes exist perfect in distinct individuals. To this group belong fish, reptiles, birds, mammals, and many insects. The lowest class here is the "oviparous," in which eggs

are laid by the female, and then hatched by heat applied externally, as in insects, fish, reptiles and birds.

"Ovaviviparous" animals produce eggs, but these are retained within the body of the female until hatched. This is true of some reptiles. In the "viviparous" mode the eggs exist, but are very minute, and development proceeds within the body of the female.

The "aplacental" animals, opossums and kangaroos, bring forth their young in a very imperfectly developed state, while in the "placental" animals the young are much further developed at the time of birth, as is true of all the domestic animals.

Bees are oviparous insects, in which an egg is laid, which in time hatches into a worm (grub, larva or caterpillar). This, after a time, spins a cocoon, and becomes the quiescent pupa, and after a variable time the pupa changes into the imago or perfect insect. The honey-bee has always passed through all the stages of the egg, the worm, the pupa, and the perfect insect.

In a perfect colony of honey-bees in the summer time we find one queen, a few hundred drones, and several thousand workers, of the last from 10,000 to 40,000. Now, that eggs and worms and young bees are found in bee-hives was long known, but by what means the eggs were laid for a long time baffled the most careful observers. The queen-bee was generally considered the ruler of the colony, and a *male*, hence, in Shakespeare, we read:

"They have a king and officers of state."

And in Virgil, the Latin poet,

"First of the throng and foremost of the whole
One stands confest, the sovereign and the soul."

The naturalist Aristle has left a remark showing that some observers of his time, or possibly earlier, had a clue as to the origin of bees, for he says, "Some say that the rulers produce the young of the bees." About the time of Christ, Virgil, the poet already quoted, gave the following method for replenishing depleted bee-hives:

A young bullock is to be killed by being suffocated. His body is covered with flowers, and allowed to lie in a secluded place until it decomposes. Worms will appear in the putrid mass, which, in time, will hatch into bees, and then if empty hives are near, the new bees will enter the same. Virgil states, however, that this is the method *said to be practiced* in Egypt, but some early English writers gravely recommended the plan as the correct thing to do.

The earliest mention I find of any modern person knowing the true method of bee-reproduction is that of Joseph Warden, physician of Corydon, England, who, in 1617, published a curious and interesting little book, entitled, "The Feminine Kingdom; or, the True Amazons." In this book he tells us that the queen is the one female in the colony, and that she is at once the ruler and mother of all within the hive.

Butler, an English bee-keeper of an earlier date, seems also to have had a correct view of the same matter. Recent students have cleared the matter all up, and we are now able to understand quite fully what so long puzzled our predecessors.

We will consider first the origin of the queen, then of the workers, and last of all, of the drones.

How the Queen-Bee is Produced.

The queen is produced by two methods, which may be termed the *ordinary* and the *extraordinary* methods. As to the ordinary way: In a strong colony of bees, in the months of May and June, and sometimes later (this is for the latitude of Pennsylvania), there will often be found large cells, which on the exterior much resemble ground-nuts or peanuts. These cells are generally at the sides of the combs, though they are sometimes found on the face of a comb. They have thick walls, and an internal cavity much greater than that found in either worker or drone cells.

A peculiarity of the queen-cells, for so there are called, is that *the mouth opens downward*, while all other cells in the hive are horizontal. This arrangement is doubtless made that more room may be secured for the cell, for naturally the combs are placed too close together to build the queen-cells in the ordinary horizontal position. At any rate, queens will hatch from cells placed horizontally. In these cells eggs are placed, by what member of the colony, is not certainly known.

A single egg is placed in each cell, some say by the queen, others think by the workers. A number of careful observers have declared that they have seen the queen in the very act of depositing eggs in these cells. No one doubts that the queen lays these eggs. In time, they hatch into young queens, if the colony is strong, and the weather is favorable; the young queens will be ready to emerge in 16 days from the time the egg becomes a worm. However, if the workers are not ready for the new queen, they will confine her in her cell, feeding and caring for her there.

Under favorable conditions, about eight days before any young queen will hatch out, the old queen leads off a portion of the bees to form a new colony, which, leaving the old home for the new queen, will, in a short time, fully replenish it with bees.

So soon as a young queen emerges from her cell, she makes a tour of the hive, and finding any queen-cells, unless prevented by the workers, proceeds to tear them open and destroy the immature queens. In case the workers prevent this destruction, a second swarm is given off, led by the newly hatched queen.

It is a curious fact, that the queen-bee does not spin a complete cocoon, but leaves one end open, which makes her destruction very easy to any rival. About the only use the queen makes of her sting, is to destroy her rivals with it.

If the weather becomes bad, and the honey-flow ceases, the workers frequently destroy all the queen-cells, thus preventing all swarming for the season. On this plan, modern bee-keepers prevent second swarms, by opening the hives and cutting out all queen-cells.

What we call the extraordinary method follows: Should the queen of a healthy colony be lost through any accident, there being in the colony *worker larvæ* not over three days old, the workers will select some of these worms, destined in the ordinary course of things to become worker-bees, and by enlarging their cells, by assiduous attention, feeding them almost constantly upon a peculiar substance called "royal jelly," will produce, in due time, a number of healthy young queens, one of which, the first to hatch, becomes the leader of the colony. This important discovery, that the queen proceeds from a worker-egg, was first announced by Schirarch, a Saxon clergyman, in 1771. (It is an interesting fact that nearly all of the great discoveries in bee-production have been made by clergymen.)

On this discovery depends the modern methods of commercial queen-rearing, by which queens are now produced, in every modernized apiary the world over, many bee-keepers making queen-rearing an exclusive business. Though the queen hatches in *sixteen days*, the drone requires *nineteen*, and the workers *twenty-one days*. The shorter period is probably due to the much more abundant and the richer food supplied to the queens; also because she has a more roomy cell in which to develop. This is an excellent illustration of how much environment will do for a developing animal. On these influences, the Rev. L. L. Langstroth has written in his classic work on the "Hive and Honey-Bee." He says:

"The peculiar mode in which the worm designed to be reared as a queen is treated, causes it (1) to arrive at maturity almost one-third earlier than if it had been bred a worker. And

yet, as it has to be much more fully developed, according to ordinary analogy, it should have had a slower growth. (2.) Its organs of reproduction are completely developed, so that it is capable of fulfilling the office of a mother. (3.) Its size, shape and color are all greatly changed. Its lower jaws are shorter, its head rounder, its abdomen without a receptacle for secreting wax, and its legs have neither brushes nor baskets, while its sting is more curved, and one-third longer than that of the worker. (4.) Its instincts are entirely changed. Reared as a worker, it would have been ready to thrust out its sting at the least provocation; whereas, now, it may be pulled limb from limb, without attempting to sting. As a worker, it would have treated a queen with the greatest consideration; whereas, now, if brought into contact with another queen, it rushes forthwith to mortal combat with its rival. As a worker, it would frequently have left the hive, either for labor or exercise; as a queen it never leaves the hive after impregnation, except to accompany a new swarm. (5.) The term of its life is remarkably lengthened; as a worker, it would not have lived more than six or seven months; as a queen, it may live seven or eight times as long. All these wonders rest on the impregnable basis of complete demonstration, and instead of being witnessed only by a select few, may now be familiar sights to any bee-keeper who prefers to acquaint himself with the facts, rather than to cavil and sneer at the labors of others."

Of the anxiety of bees over the loss of their queen, and joy on finding her, the same writer says:

"A large hive standing at a distance from any other, was removed in the morning of a pleasant day, to a new place, and another hive, containing only comb, was placed in its stead. Thousands of workers, which were out in the fields, or which left the old hive after its removal, returned to the familiar spot. It was affecting to witness their grief and despair; they flew in restless circles about the place where once stood their happy home, entered and left the new hive, continually expressing in various ways their lamentations over so cruel a bereavement. Towards evening, they ceased to take wing, and roamed in restless platoons in and out of the hive, and over its surface, acting all the time, as though in search of some lost treasure.

"I now gave them a small piece of brood-comb, containing worker-eggs and worms. What followed the introduction of this brood-comb took place much quicker than it can be described. The bees which first touched it raised a peculiar note, and in a moment the comb was covered with a dense mass; their restless motions and mournful noises ceased, and a cheerful buzz at once proclaimed their delight. Despair gave place to hope, as they recognized in this small piece of comb the means of their deliverance.

"Imagine a large building filled with thousands of persons, tearing their hair, beating their breasts, and by piteous cries, as well as by frantic gestures, giving vent to their despair; if some one should enter this house of mourning, and by a single word cause all these demonstrations of agony to give place to smiles and congratulations, the change would not be more instantaneous and wonderful than that produced when the bees received the brood-comb."

The Mating of Queens.

If the weather is favorable, on the third day from the cell, the young queen goes forth on her "bridal tour," and in a few hours, if she is successful, she returns, bearing with her the organs of the male, which has perished in the act of impregnation. If the third day is cloudy, or wet, she goes forth on the first favorable day, and she continues to go forth day after day until she is successful.

The queen is always (some object to this) fertilized in the open air, while on the wing, *and but once in her life.* This was first announced by the blind naturalist Huber, at the close of the last century. The fertilizing element received from the male is stored in a little receptacle, and a little of it ejected as the eggs pass down the oviduct, thus vitalizing them.

Average Age of Prolific Queens.

The queen in her prime may lay from 2,000 to 3,000 eggs in a single day. Her second year is generally thought to be the most prolific, and after that she gradually declines in value. The queen lays such large numbers of eggs, however, only during the busy season of the year, when honey is coming in rapidly. During the winter months, and during a sudden cessation of the honey-flow, she ceases to lay almost entirely, though I think a few eggs and worms will be found at most times in vigorous colonies. This is a wise provision to protect the colony from destruction through loss of the queen.

When a queen has grown old and is no longer very prolific, the workers see that a new one is reared, and the old one is then "superseded," though occasionally the old and the young queens have been seen living in harmony in the same hive, and actually at the same time, on the same comb.

Some bee-men think that the workers will, unaided, attend to the destruction of feeble queens, but at present a large number of the more progressive apiarists prefer to do this themselves, thus insuring at all times to all their colonies, young and vigorous queens. This is one important particular in which modern bee-keeping differs from the old.

How Bee-Eggs are Hatched.

The eggs of the bee are hatched by the united heat of the colony. The interior of a hive is always warm, even in the dead of winter, and hence, when the number of bees in a hive becomes small, the colony perishes, being unable to maintain the requisite degree of animal heat. Hence, also, the reason for increasing only by swarming.

The Progeny of Unfertilized Queens.

If the queen-bee fails to become fertilized before she is 21 days old, she remains through her life sterile. This was first observed by Huber. In 1845, Dzierzon, a Catholic clergyman of Germany, observed that young queens not fertilized, and old, nearly exhausted queens, alike laid eggs, all of which hatched only drone-bees. After repeated observations, Dzierzon announced the discoveries, and the theory of *parthenogenesis*, which, in short, is, that some animals have, under peculiar circumstances, the power of bringing forth young, without the intervention of the male. In the case of bees, these unfertilized eggs hatched only into drones.

Mr. Langstroth, about 1851, sent an old drone-laying queen to Dr. Joseph Leidy, the renowned scientist, who found that the receptacle in which the male element is stored, was entirely empty. The same observation has been made by competent persons on young drone-laying queens. It seems then, that a queen can lay eggs which will produce queens, workers or drones. That queens come from ordinary worker-eggs, laid in special cells, and attended with special care. The workers come from fertilized eggs, laid in ordinary cells, while the drones come from unfertilized eggs. It would seem that the queen can *will* whether she will have worker or drone progeny, she voluntarily discharging the male fluid upon the eggs as they pass down the oviduct, or withholding it. This point is, however, in dispute, some believing that the small worker-cell compresses the body of the queen, and that this pressure opens the mouth of the vessel containing the male fluid. Be that as it may, the queen can also lay drone-eggs in worker-cells, and worker-eggs in the cells which have only just been commenced, and where

this pressure cannot possibly be exerted.

The workers hatch in 21 days. A careful microscopic study of their sexual system (first made in the time of Huber, and for him), shows them to be partially developed females, the sexual organs being very rudimentary. Here rests the possibility of developing *any worker worm* into a queen, if it is only taken early enough, and subjected to lengthening to meet the needs of the larger occupants. All this shows the wonderful instincts of this wonderful insect.

Edenburg, Pa.

LARVAL FOOD.

The Quantity and Quality of the Food of Larval Bees.

Written for the Druggist Circular
FOR SEPTEMBER.

The bee has proven a sufficiently interesting study to engage the attention of many able observers, among the keenest of whom are Leuckart and Schonfeld, whose observations concerning the food of larval bees agree in the main, and are according to A. V. Planta (*Zeit. Physiol. Chem.*) substantially as follows:

1. The food of the queen-bee larvæ is the same during the whole of the larval period; it is free from pollen-grains, which have been reduced to a thickish but homogeneous juice by the digestive action of the stomach of bee.

2. The food of the larval drones is also, during the first four days of the larval period, free from pollen, and appears to have been completely digested previously. After four days their food is rich in pollen-grains, which have, however, undergone a certain amount of digestion. The food stuff of the larvæ is probably formed from bee-bread. The composition of the food of the queen-bee larvæ was water, 69.38; total solids, 30.62. In the solids the proportions were, nitrogenous material, 45.14; fat, 13.55; glucose, 20.39; ash, 4.06.

The composition of the food of the drone-larvæ and those of the working bees both differed from each other, and from that of the queen-bees. All kinds are rich in nitrogen; all were of a grayish white color; that of the queen-bee was the stickiest, that of the workers the most fluid. Peptone appeared to be absent; the greater part of the nitrogenous material present was proteid. The ethereal extract was in all cases acid, but formic acid was absent. The sugar present was, in all cases, invert sugar, whereas the sugar in pollen-grains is invariably cane-sugar.

There are certain differences in the composition of the different kinds of larval food, more especially in the composition of the solids present. Its composition is, moreover, quite different from that of the bee's saliva, which contains no sugar. The difference between the proportional amount of the different solids present in the different forms of larval food is a constant one, and no doubt this variation has in view the particular requirements of the larvæ in question. Certain small but constant differences were also observed in the chemical composition of the food of the larval drones during the first four days, and at subsequent periods. Not only is there a difference in the quality, but there is also one in the quantity of the food supplied.

The juice from 100 queen-bee cells yielded 3.6028 grams of dry substance; that from 100 drones' cells, 0.2612 gram; that from 100 workers' cells, 0.0474 gram. The substance investigated was the juice of pap, the whitish sticky substance which the working bees store in the cells of the larvæ of the queens, drones and workers.

Leuckart regarded it as the product of the true stomach of the working bees, which they vomit into the cells, in the same way that honey is vomited from the honey-stomach. Fischer and others regarded it as the product of the salivary glands of the bees. Schonfeld, in numerous papers, has recently shown that Leuckart's original view is the correct one. He showed that the saliva can be easily obtained from the salivary glands of the head and thorax, and that it is very different from the food juice deposited in the cells of the bees; and that, moreover, the juice is similar, both chemically and microscopically, to the contents of the bee's true stomach; he showed also from the consideration of certain anatomical and physiological peculiarities of the bee, such as the position of the mouth, the inability of the bee to spit, etc., that the view of this substance being saliva, is quite untenable.

Certain observers have replied that a bee cannot vomit the contents of its true stomach, because of a valve which intervenes between it and the honey stomach; but Schonfeld has shown that the structure, mistaken by these observers for a valve, does not act as one, but is in reality an internal mouth, over which the animal has voluntary control, and by means of which it is able to eat and drink the contents of the honey-stomach when necessity or inclination arises. By light pressure on the stomach, and stretching out the animal's neck, the contents of the stomach can be easily pressed out. Planta's investigations entirely confirm Schonfeld's view, that this substance comes from the bee's stomach.

REARING QUEENS

By the Swarming Impulse, Not in the Swarming Season.

Written for the American Bee Journal
BY A. N. CLARK.

Recently Mr. Alley stated that he had in August reared queen-cells in colonies having queens. I do not know his method, but a year ago last July I had cells built in a normal colony as follows:

I contracted the hive to 8 Langstroth frames, 2 of which were empty combs. There being but little nectar in the fields, I fed one pound of diluted honey each day; this stimulated breeding, and, being crowded for room in the course of a week, they commenced building cells preparatory to swarming. As soon as the cells were started, I removed the comb containing them, replacing it by a selected comb of hatching eggs in which the cell-walls were broken down in rows that were horizontal.

Upon examination a few days later, I found cells on the prepared comb. Just before the cells were ready to seal, the comb of cells was removed to a queenless colony. By thus removing cells, replacing with empty comb, and the discontinuance of feeding, swarming was prevented.

It is quite possible that one would not always be so successful. For instance, the bees might build cells of their own larvæ instead of from that given them; and frequently they might swarm before the cells were removed, or, even after their removal. In some cases the queenless colony might destroy the unsealed cells given them. Perhaps Mr. Alley's method overcomes these difficulties.

Although queens reared by the above method seem as good as any, I doubt their being *better* than those reared in queenless colonies, strong in young bees.

Why Bees Gather More Propolis in the State of Michigan.

Some apiarists have wondered why bees in Michigan use propolis more freely than they do in some other States. I think that it is due to the greater number of tamarack trees that grow here. The bees are now gathering large quantities of resin, which exudes from the cones on the tamarack and evergreen trees.

East LeRoy, Mich.

STRAIGHT COMBS.

Securing Straight Combs Without Comb Foundation.

Written for Farm, Field and Stockman
BY S. E. MILLER.

This is one of the first difficulties that the beginner in bee-culture will meet with, if he has not some good book to refer to, and even some of these only tell how to do it by using comb foundation. I believe I have never seen an article in any book or paper which told how straight combs could be secured without the use of foundation. Although it is the best and cheapest in the long run, it is not every beginner who has the money to invest, or wishes to purchase the article, therefore, the question arises how to get along without it.

The following plan was given to me by a brother bee-keeper, and I have since verified it to my satisfaction :

When hiving a swarm, if you have already a movable-frame hive containing straight combs, take out one, or better, two combs, replacing them with empty frames or division-boards. Insert these frames in the new hive which the swarm is to occupy, putting them near the centre, with an empty frame between them. The bees will cluster on these two frames of brood, and will be sure to commence work on the frame between them first, and having a straight wall an each side, will be almost certain to build it straight. If honey is plentiful, this frame will soon have a straight comb started all along its top-bar, but should they build any side-combs, remove them. Now part these frames and put two more empty frames between, leaving the frame with the newly-made comb in the centre, an empty one on each side of it, and the two finished frames containing full combs on the outside of these.

Continue in this way until all the frames have a small straight comb started along under their top-bars, after which very little attention will be necessary to insure straight combs. Until then, be ever attentive, not allowing them to work more than two or three days without examining them, and cutting off all combs that may be started where you do not want them. You can get along with one full frame of comb to start with, or even without any, but in that case you must be vigilant, and never allow the bees to start building the combs crosswise of the frames.

Some beginners seem to think that all they have to do is to put the bees into the hive, in the belief that the bees will know how to manage things. The result is, the bee-keeper has a movable-frame hive in which the frames are not "movable" after being filled with combs. I know of a case of this kind just across the river from here. Bees, if allowed to have their own way in frames not having foundation starters, are, I think, just as likely to build crosswise as lengthwise of the frames.

With a little experience in this way, the beginner will soon have no trouble in securing combs as straight as can be secured with comb foundation.

I might add that I have had the best results in frames with a triangular strip of wood fastened to the underside of the top-bar, instead of the comb-guide in common use at the present day.

OLD QUEENS.

The Value of Queens After 2 or 3 Seasons.

Written for the Prairie Farmer
BY MRS. L. HARRISON.

Some prominent bee-culturists (among them Mr. Oatman, of Dundee, Ills., who counts his colonies by hundreds), do not keep a queen after she has laid for three seasons. They keep bees for the money there is in them, and claim they obtain the best returns by so doing, as an old queen, like an old hen, lays but few eggs, and that she is apt to fail when most needed. Nor if the colonies are not populous, at the right time, the more of them the owner has, the poorer he will be. Just before the honey seasons closes in the fall, is a good time for renewing queens, as then no time will be lost. If it is done in the spring, it may materially damage the honey crop for that season.

Those who desire to purchase queens can obtain them much cheaper in the fall, than at any other time of the year. It is better for all bee-keepers to introduce a little new blood among their bees now and then ; following the example of breeders of fine horses, cattle, sheep and fowls, they should aim at excellence, and not be satisfied with any but the best. Queen-bees are now sent in the mails to all parts of our country, for a two-cent stamp, and even from Europe, with entire safety.

It is not necessary to purchase queens, except to introduce new blood now and then to build up an apiary to a high state of excellence. Every close observer will soon notice which are his best colonies, those that are most populous, and consequently gather the most honey. The best colonies generally swarm earliest, and if all of the queen-cells are preserved, the bee-keeper will be master of the situation. These young queens can be kept during the busy season in a hive with two or three frames of comb, and are ready to be introduced to large colonies at the pleasure of their owner. Where after-swarms or "casts" have been hived in the hurry incident to swarming, and are being united in the fall, the good queens should be preserved ; her bees will proclaim her character.

In the general overhauling of the apiary in the fall, some colonies will be generally found not up to the standard ; bees very small, or else very dark, the queen having mated with a black drone. The queens removed while uniting could be introduced to such colonies. A general weeding-out should take place in the fall, of all undesirable stock.

Imported queens were for many years held at high figures, as so many died in transit. An Irishman once said to me : "Mr. Rogers once paid twenty dollars for a bay, a single bay, Madam." Since a better way of sending them has been discovered, few are lost, and they can be purchased at reasonable rates.

It is an easy matter to discern Italian queens. They stick to the comb, and their bright color attracts the eye ; but with the dark or common bees, it is different. The bees run like a flock of sheep, and the queen hides among them, and cannot be discerned by her color. I have lifted the combs of a black colony two or three times, and failed to find her sable majesty. I now have a queen-excluder, which is a piece of zinc with holes in it, that admit workers, but not drones or queens, and put that against the entrance of a new hive. I remove the old one, putting this in its place. Then I remove the combs and brush off the bees, place them in the new hive, cover them up, and, if I am busy, retire to new duties and allow them to enter the hive at their own sweet will. The queen and drones will be found on the excluder. One time, in driving a colony in this way, I picked up the black queen, and immediately put an Italian in her place, and she was well received.

It should be borne in mind, that the old queen must first be removed before releasing a new one, or she will be destroyed. Then cage the queen, and release her in 48 hours, or, better still, let the bees do it. If a shipping-cage is fastened to the side of a comb with the tin points, the bees will eat away the comb and release her. I roll up wire-cloth over a little stick and wedge in the comb as stoppers, and let the bees release her from this.

Peoria, Ills.

CONVENTION DIRECTORY.

1888 *Time and Place of Meeting.*

Oct. 16, 17.—Union, at Clayton, Ills.
S. N. Black, Pres., Clayton, Ills.

Oct. 20.—Wabash County, at Wabash, Ind.
Henry Cripe, Sec., North Manchester, Ind.

Nov. 21, 22.—Pan-Handle, at Wheeling, W. Va.
W. L. Kinsey, Sec, Blaine, O.

Dec. —.—Michigan State, at Jackson, Mich.
H. D. Cutting, Sec., Clinton, Mich.

☞ In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

SELECTIONS FROM OUR LETTER BOX

A Power for Protection.—G. H. Ashby, Albion, N. Y., on Oct. 1, 1888, says:

I send my dues for the Bee-Keepers' Union. The Union is doing wonders for the small amount expended. I do not believe that any bee-keeper, whether of few or many colonies, would miss one dollar per year—about 8 cents per month; and if only one-half would "chip in" that amount, what a power for protection the Union would be.

Over One-Half a Crop.—C. Thielmann, Thielmanton, Minn., on Sept. 27, 1888, says:

Bees in this vicinity have had a good time for honey gathering for the past 5 or 6 weeks; but for the past 2 weeks they have not done much in the sections on account of the cold nights, but they have filled the brood-chambers with honey. They have more than what they need for winter and spring. There are multitudes of flowers in bloom yet, but it has been too cold the past two days for the bees to work. The honey crop here is a little over one half, and about one-third of it is white, but not as white as usual. I got about 7,000 pounds, 6,000 pounds of which is comb honey.

Bee-Keeping in Dakota.—Andrew Craig, Empire, Dakota, on Sept. 22, 1888, writes:

I have 3 colonies of bees, one of which stored 18 pounds of surplus honey in sections; the other 2 did nothing. Settlers here are few and far between, and my bees have troubled nobody yet. My surplus was all gathered after Aug. 10, and is of light amber color. It was one half granulated within a week after being taken off. Alsike clover sowed last spring blossomed some, and bees worked immensely on bee-balm. Buckwheat yielded no nectar this season. Golden-rod and asters are abundant.

Best Season for 5 Years.—K. A. Dyke, Effingham, Ills., on Sept. 27, 1888, writes:

Having seen so many discouraging reports in the bee-papers lately, I feel like giving mine for this season. I commenced the season with 12 colonies, increased them by manipulation to 23, and secured 1,100 pounds of honey, three-fourths of it extracted, and all from heart's-ease and Spanish-needle. I had to feed my bees during August until about the 16th, to keep them from starving, and to keep up brood-rearing; they used up the feed clean each day, and when the honey-flow came on Aug. 26, it was a refreshing sight to see them lay it away. From Aug. 26 to Sept. 9 the weather was cloudy, some rainy, and quite warm, but very little sunshine; and with thousands of acres of bloom in sight and range, it is no wonder that the bees stored honey rapidly. Since that time it has not been so favorable, and only asters are yielding anything now. This has been the best season here for five years. Last year was considered a failure, yet I increased from 9 colonies to 12, and wintered all on the summer stands safely, and secured 350 pounds of surplus honey. I am disposing of my honey in the home markets, at 12½ to 18 cents per pound, wholesale; and 15 to 20 cents retail. I have lots of competition in the way of broken honey and "squeezed stuff."

Frozen Foundation.—C. G. Ridout, of Hutchinson, Minn., asks the following question:

Will it in any way injure comb foundation to freeze, or be kept in a room all winter that does freeze hard?

[No; if not handled while it is cold. Take it into a warm room and let it remain for a day or two before handling it in any way.—ED.]

The Illinois State Fair.—D. R. Rosebrough, Casey, Ills., on Sept. 27, 1888, writes:

I have just returned from the State Fair, and so far as bees and honey are concerned, it was a failure. There were only three or four exhibits of bees and honey, but it was in small amounts, and in bad condition. The best exhibit of honey and bees was from Piatt county. Dadant's comb foundation took the "blue ribbon." I could not take any honey this year, as I had none to take, and that was likely the reason why there was not more exhibited; but I am in hopes of having some honey next year. I think that the bee-keepers of Illinois should arise in their might, and not allow our sister States to excel us in this line; so next year I want to see a dozen or more bee-keepers with honey at our State Fair. All other exhibits of agricultural products, except honey, were grand.

Bee-Keeping in Ontario.—Mr. R. F. Holtermann, of Brantford, Ont., Vice-President of the Ontario Bee-Keepers' Association, sends the following report of bee-keeping in Ontario:

The past winter was passed fairly well by the bees. Spring dwindling was excessive, owing to severe weather. The clover yield was a total failure in most localities, linden the same, and at its close showers and warm weather gave us some thistle honey in buckwheat localities; the fall flow was fairly good. On an average not sufficient honey has been secured for winter, yet colonies are otherwise in good condition. Whilst the average is so low, we hear of isolated cases where a yield of 30 to 40 and even 60 pounds per colony has been obtained; and, on the other hand, colonies had to be fed in the height of the honey season. Increase has been but slight, and all colonies remaining should be carefully preserved and cared for. There has been practically no comb honey taken, and the extracted honey will be off the market before the end of the present month.

AN ENGLISH OPINION.

The Rev. L. L. Langstroth.—In an article noticing the receipt of a cabinet photograph of Father Langstroth, from Mr. T. B. Reynolds, of Dayton, O., the *British Bee Journal* for Sept. 20, remarks as follows:

The photograph is a full-length, cabinet size, and gives a good idea of the general appearance and intelligent countenance of one who still retains so many admirers and friends in both hemispheres. It gives us much pleasure to note that, though long past the allotted threescore years and ten, and though for many years he has passed through much physical suffering, he continues to look so hearty and well, and it would appear as if many years were still in prospect before the "the grand old man" is called away from our midst. The name of the Rev. L. L. Langstroth has for so many years been "a household word" with bee keepers, that we feel assured that many will feel inclined to indulge in the enjoyment of being able to look into that calm, intelligent, and benevolent face which is now presented to them.

We feel a spirit of gratitude pervading our hearts that we have been permitted to look, as it were, upon his living presence. Our memory passes back to that sentence which well-nigh thirty years ago he penned: "Debarred to a great extent by ill-health from the appropriate duties of my profession, and compelled to seek an employment calling me as much as possible into the open air, I cherish the hope that my labors in an important department of rural economy may prove serviceable to the community." Truly, whatever loss there may have been to his fellow men in his inability to follow his high and holy calling, there has been a clear, and a great, and an abiding gain to the bee-keeping world; and we are ready to subscribe to that which his friend, the Rev. Robert Baird, said of him: "He well deserves the name of Benefactor—infinitely more so than many who in all countries and in all ages have received that honorable title." And how feelingly Mr. Langstroth directs the attention of those of his own profession to the study of the economy of the honey-bee: "The attention of ministers of the gospel is particularly invited to this branch of natural history. An intimate acquaintance with the bee-hive, while beneficial to them in many ways, might lead them in their preaching to imitate more closely the example of Him who illustrated His teachings by "the birds of the air, and the lilies of the field," as well as the common walks of life, and the busy pursuits of men.

The "old man eloquent" is still with us, and his voice is ever and anon heard in the exercise of his sacred calling. It was but a very short time since—only a few months ago—that this good man visited Mr James Heddon, of Dowagiac, Mich. Mr. Heddon says: "Nearing eighty years of age, and not in the enjoyment of very robust, physical health, I was astonished to find his mental powers as young and vigorous as those of a man of middle age." On this occasion he preached in the Congregational Church, and Mr. Heddon proceeds to say: "I think I may safely say that many years have passed away since our city has been honored with such beneficent and well-delivered sermons. His voice is round, full, and melodius, fully equal to four times the capacity of any church in the city." We can only breathe a hope that one whom bee-keepers have learned to love and reference may long be spared to us.

[The last sentence calls forth our most hearty response.—ED.]

AMERICAN BEE JOURNAL
ESTABLISHED IN 1861 — OLDEST BEE PAPER IN AMERICA

ALFRED H. NEWMAN,
BUSINESS MANAGER.

Business Notices.

If You Live near one post office and get your mail at another, be sure to give the address that we have on our list.

Hilton's new pamphlet on Comb Honey Production has been reduced in price to 5 cents. For sale at this office.

If you Lose Money by carelessly enclosing it in a letter, it is without excuse, when a Money Order, which is perfectly safe, costs but 5 cents.

Paper Boxes—to hold a section of honey for retail dealers. We have two sizes on hand to carry sections 4¼x4¼ and 5¼x5¼. Price, $1.00 per 100, or $8.50 per 1,000.

Preserve Your Papers for future reference. If you have no **BINDER** we will mail you one for 60 cents; or you can have one FREE, if you will send us 3 new yearly subscriptions for the BEE JOURNAL.

Yucca Brushes, for removing bees from the combs, are a soft, vegetable fiber, and do not irritate the bees. We supply them at 5 cents each, or 50 cents a dozen; if sent by mail, add 1 cent each for postage.

Please write *American Bee Journal* on the envelope when writing to this office. Several of our letters have already gone to another firm (a commission house), causing vexatious delay and trouble.

Pure Phenol for Foul Brood.—Calvert's No. 1 phenol, mentioned in Cheshire's pamphlet on pages 16 and 17, can be procured at this office at 25 cents per ounce. Not being mailable, it must be sent by express.

Apiary Register.—All who intend to be systematic in their work in the apiary, should get a copy of the Apiary Register and begin to use it. The prices are as follows:

For	50 colonies (120 pages)	$1 00
"	100 colonies (220 pages)	1 25
"	200 colonies (420 pages)	1 50

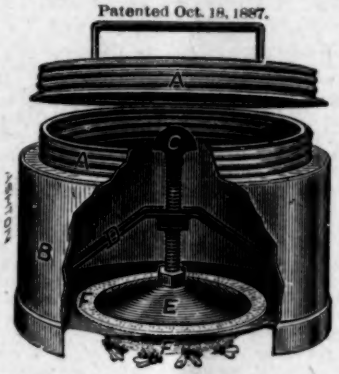
Photographs of Bee-Keepers.—The "medley" gotten up by E. O. Tuttle, containing the faces of 131 representative apiarists, and a printed sketch of each one, will be sent with the BEE JOURNAL for one year for $1.75; or we will present it *free*, by mail, to any one, for a club of three subscribers and $3.00.

CLUBBING LIST.

We Club the *American Bee Journal* for a year, with any of the following papers or books, at the prices quoted in the **LAST** column. The regular price of both is given in the first column. One year's subscription for the American Bee Journal must be sent with each order for another paper or book:

	Price of both.	Club
The American Bee Journal	1 00	
and Gleanings in Bee-Culture	2 00	1 75
Bee-Keepers' Magazine	1 50	1 40
Bee-Keepers' Guide	1 50	1 40
Bee-Keepers' Review	1 50	1 40
The Apiculturist	1 75	1 60
Canadian Bee Journal	2 00	1 80
Canadian Honey Producer	1 40	1 30
The 8 above-named papers	5 65	5 00
and Cook's Manual	2 25	2 00
Bees and Honey (Newman)	2 00	1 75
Binder for Am. Bee Journal	1 60	1 50
Dzierzon's Bee-Book (cloth)	3 00	2 00
Root's A B C of Bee-Culture	2 25	2 10
Farmer's Account Book	4 00	2 20
Western World Guide	1 50	1 30
Heddon's book, "Success,"	1 50	1 40
A Year Among the Bees	1 75	1 50
Convention Hand-Book	1 50	1 30
Weekly Inter-Ocean	2 00	1 75
Iowa Homestead	2 00	1 90
How to Propagate Fruit	1 50	1 25
History of National Society	1 50	1 25

Hastings' Perfection Feeder.—This excellent Feeder will hold 2 quarts, and the letting down of the feed is regulated



by a thumb-screw. The cap screws securely on. It is easy to regulate—either a spoonful or a quart—and that amount can be given in an hour or a day, as desired. By it the food can be given where it is most needed—just over the cluster. Not a drop need be lost, and no robber bees can get at it. A single one can be had for 40 cents, or a dozen for $3.50, and it can be obtained at this office. Postage 10 cents extra.

Red Labels for Pails.—We have three sizes of these Labels ranging in size for pails to hold from one to ten pounds of honey. Price, $1 for a hundred, with the name and address of the bee-keeper printed on them. Smaller quantities at one cent each; but we cannot print the name and address on less than 100. Larger quantities according to size, as follows:

	Size A.	Size B.	Size C.
250 Labels	$1.50	$2.00	$2 25
500 Labels	2 00	3.00	3.50
1,000 Labels	3.00	4.00	5.00

☞ Samples mailed free, upon application.

The Convention.—The pamphlet containing the report of the proceedings of the Union Convention in Chicago, Ills., is published, and can be obtained at this office for 25 cents. Or bound up with the history of the International Society, and a full report of the Detroit and Indianapolis conventions, for 50 cents, postpaid.

Clover Seeds.—We are selling *Alsike Clover Seed* at the following prices: $8.00 per bushel; $2.25 per peck; 25 cents per lb. *White Clover Seed:* $10.00 per bushel; $2.75 per peck; 30 cents per lb. *Sweet, or Melilot, Clover Seed:* $6.00 per bushel; $1.75 per peck: 20 cents per lb.—by express or freight.

Cork for Winter Packing.—Its advantages are that it never becomes *musty*, and it is *odorless*. Cushions can be made of cloth and filled with the cork, for winter packing. We can supply all orders now at 10 cents per pound. Or a seamless sack of it, containing 15 pounds, for $1.00.

Exchange.—We will accept Honey and Beeswax in exchange for Bee-Keepers' Supplies in any quantity. Those desiring to make a trade are invited to correspond with us, stating quantity, quality, and price, and the goods they want in exchange.

Alfalfa Clover.—For habits and cultivation of this honey-plant, see page 245. We supply the seed at the following prices:—Per lb., 22c.; per peck, $3.00; per half-bushel, $5.50; per bushel of 60 lb., $10.00. If wanted by mail, add 10 cents per pound for bag and postage.

We Want 20,000 subscribers. Out of the 300,000 bee-keepers in America, certainly this is not an extravagant desire! It is only one out of every fifteen! We confidently ask those who appreciate the AMERICAN BEE JOURNAL, to show it by sending us one or more new subscribers. We will give them full value for their money.

A Home Market for honey can be made by judiciously distributing the pamphlets, "Honey as Food and Medicine." Such will create a demand in any locality at remunerative prices. See list on the second page of this paper.

A Modern BEE-FARM, and its Economic Management; showing how bees may be cultivated as a means of livelihood; as a health-giving pursuit; and as a source of recreation to the busy man. By S. Simmins. For sale at this office. Price, $1, postpaid.

Your Full Address, plainly written, is very essential in order to avoid mistakes.

Conventions.—The time for holding Bee-Keepers' Conventions has now arrived, and we cannot give any better advice than this: Let each one attend who can do so, and take part in making these meetings interesting and instructive. If you have not already obtained the "Bee-Keeper's Convention Hand-Book," do so at once to post yourself up on how to conduct such meetings correctly. It contains a simple Manual of Parliamentary Law and Rules of Order for the guidance of officers and members of Local Conventions—Model Constitution and By-Laws for a Local Society—Programme for a Convention, with Subjects for Discussion—List of Premiums for Fairs, etc. Bound in cloth, and suitable for the pocket. Price, 50 cents. We will club this book and the AMERICAN BEE JOURNAL for one year for $1.25. It also contains a lot of blank leaves on which you can note important matters as they come up. Do not fail to send for a copy of it.

Nature's Way.—This is the title of a 15-cent pamphlet entitled, "G. M. Doolittle's Method of Rearing Queens"—which is called "The nearest approach to Nature's way yet devised." It describes his method, and points out its advantages. For sale at this office.

Colored Posters for putting up over honey exhibits at Fairs are quite attractive, as well as useful. We have prepared some for the BEE JOURNAL, and will send two or more free of cost to any one who will use them, and try to get up a club. Sample copies will be sent free upon application.

Simmins' Non-Swarming System.—We have a few of these books left, and we will club them with the AMERICAN BEE JOURNAL for one year, both postpaid, for $1.25. The subscription to the BEE JOURNAL can be for next year, this year, or may begin anew at any time.

We Have some copies of the old edition of Cook's Manual left, which we will sell at the old price, $1.25. The price of the new edition is $1.50 per copy; a notice of which may be found on page 579.

We will Present a Pocket Dictionary for two subscribers with $2.00. It is always useful to have a dictionary at hand to decide as to the spelling of words, and to determine their meaning.

Queens.—We can mail a Tested Italian Queen (bred for the best results as well as for beauty) for $2.00; Untested Queens $1.00 each, or $9.00 per dozen. Orders solicited.

Dr. Miller's Book, "A Year Among the Bees," and the AMERICAN BEE JOURNAL for one year—we send both for $1.50.

Honey and Beeswax Market.

CHICAGO.

HONEY.—New crop arriving slowly, but demand is limited. White clover comb, 17@18c. Extracted, 7@9c.
BEESWAX.—22c.
Sep. 12. S. T. FISH & CO., 189 S. Water St.

CHICAGO.

HONEY.—For white comb 1-lbs., 18c. Very little inquiry for anything outside of 1-lbs, and when it is wanted it is at a lower price. Extracted, the best grades, 7@8c., and some held higher. Offerings are small and demand slow.
BEESWAX.—22c. R. A. BURNETT,
Sep. 12. 161 South Water St.

DENVER.

HONEY.—Colorado, new 1-lb. sections., 13@15c. Extracted, 7@8c.
BEESWAX.—20@23c.
Sep. 7. J. M. CLARK & CO., 1409 Fifteenth St.

NEW YORK.

HONEY.—We quote: Fancy white 1-lbs., 15@17c.; 2-lbs., 14@16c. Fair white 1-lbs., 14@16c.; 2-lbs., 13 to 15c. Extracted, white, 7½@8c.
BEESWAX.—23½c.
Sep. 17. THURBER, WHYLAND & CO.

NEW YORK.

HONEY.—We quote. Fancy white 1-lbs., 17@18c.; 2-lbs, 13@14c. Fair white 1-lbs., 15@16c.; 2-lbs., 12c. Buckwheat 1-lbs., 11@12c.; 2-lbs., 10@11c. White extracted, 7½@8½c.; buckwheat, 5½@6½b.; California extracted, white sage, 7½@7¾c., amber, 7¼@7½. Demand good and prices firm. New comb honey is arriving quite freely.
BEESWAX.—23@23½c.
HILDRETH BROS. & SEGELKEN,
Sep. 26. 28 & 30 W. Broadway, near Duane St.

SAN FRANCISCO.

HONEY.—White 1-lb. sections, 11@12½c.; 2-lbs., 12½@1 c.; amber, 8@10c. Extracted, white, 5½@6c.; light amber, 5¼@5½c.; amber and candied, 4½@5c. Receipts light and market firm for best qualities.
BEESWAX.—Dull at 19@22½c.
Sep. 22. O. B. SMITH & CO., 423 Front St.

DETROIT.

HONEY.—Best white comb, 17@18c.; dark, 16c.—Extracted, 8@10c. Market bare of all kinds.
BEESWAX.—21@22c.
Sep. 24. M. H. HUNT, Bell Branch, Mich.

CINCINNATI.

HONEY.—We quote extracted at 4½@8c. per lb. Comb honey, 12@16c. Demand slow.
BEESWAX.—Demand is good—20@22c. per lb. for good to choice yellow, on arrival.
Sep. 18. C. F. MUTH & SON, Freeman & Central Av.

KANSAS CITY.

HONEY.—Choice 1-lb. sections, 18c.; dark 1-lbs., 14c.; 2-lbs., 16c.; dark, 13c. White extracted in 60-lb. cans, 8c.; amber, 7c.; in barrels and kegs, 5@8c. Demand good, prices steady, and stock fair.
BEESWAX.—None in market.
Sep. 27. HAMBLIN & BEARSS, 514 Walnut St.

NEW YORK.

HONEY.—We quote: Fancy white 1-lb. sections, 17½@18c.; 2-lbs., 14@15c. Fair 1-lbs., 14½@15½c.; 2-lbs., 12@12c. Extracted, fancy white clover, 7½@8½. California white in 60-lb. cans, 8c.; light amber in same cans, 7½c.; amber, 7¼c. Buckwheat in kegs and barrels, 5½@6. Cuban, in barrels and ½-barrels, 65c. per gallon.
Sep. 26. F. G. STROHMEYER & CO., 122 Water St.

BOSTON.

HONEY.—We quote: New 1-lb. sections, 18@20c.; 2-lbs., 14@16c. New extracted, 8@10c.
BEESWAX.—25 cts. per lb.
Aug. 24. BLAKE & RIPLEY, 57 Chatham Street.

KANSAS CITY.

HONEY.—We quote: New white 1-lbs., 18c.; light 1-lbs., 16c. California white 1-lbs., 18c.; light 1-lbs., 16c.; white 2-lbs., 16c., light 2-lbs., 14c. Extracted, white, 8c.; amber, 7c.
BEESWAX.—18@20c.
Sep. 5. CLEMONS, CLOON & CO., cor 4th & Walnut.

ST. LOUIS.

HONEY.—We quote: Extracted, 4½@5½c.; if in cans, 8@9c. White clover comb, 14@15c. Market is steady and receipts light.
BEESWAX.—21c. for prime.
Sep. 6. D. G. TUTT & CO., Commercial St.

MILWAUKEE.

HONEY.—New white 1-lb. sections 18c., and very fine, 20c.; 1-lbs, 15@18c.; old 2 and 3 lbs., not salable, 1½@14c.; dark 1 lbs., old or new, 12@13c. Extracted, new white in kegs and ½-barrels, 8@9c.; old, in same packages, 7@8c.; in tin, 8@9c.; dark in barrels or ½-barrels, 6@6½c. Arrivals of new crop small; demand not urgent, and only very moderate trade.
BEESWAX.—22@23c.
Aug 31. A. V. BISHOP, 142 W. Water st.

SAN FRANCISCO.

HONEY.—We quote: Extracted, white, 6 cents; light amber, 5½c.; amber, 5¼@5½c. Comb, 1-lbs., 13@14c; 2-lbs., 10@13c.,
BEESWAX.—20@22c.
Sep. 24. SCHACHT & LEMCKE, 122-124 Davis St.

We Supply Chapman Honey-Plant **SEED** at the following prices: One ounce, 40 cents; 4 ounces, $1; ¼ pound, $1.75; 1 pound, $3. One pound of seed is sufficient for half an acre, if properly thinned out and re-set.

The Presidential Candidates.—Among the many interesting publications brought out by the campaign, "The Presidential Candidates" is one of the best. It is of the size and style of *Harper's Weekly*. It contains portraits and sketches of all the twelve candidates, and the portraits of Mrs. Cleveland, Mrs. Harrison, Mrs. Morton and Mrs. Thurman. The large pictures of Mr. Cleveland and Mr. Harrison are very striking, and the best we have seen. The many sketches of the lives are exceedingly interesting. While all the portraits are of great interest, those of Belva Lockwood, the Suffragist Candidate, and that of Mrs. Thurman, will attract unusual attention. Altogether this is a very valuable publication at this time. It is sold by the newsdealers, or sent by J. A. & R. A. Reid, of Providence, R. I., for 10 cents.

☞ The Wabash County Bee-Keepers' Association will hold their fall meeting in the Court House at Wabash, Ind., on Oct. 20, 1888, at 10 a.m. All bee-keepers are cordially invited to meet with us.
HENRY CRIPE, *Sec.*